Avision

Mobile Scanner

User's Manual

Regulatory model: FL-0914S

Avision Inc.

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your point of purchase or service representative for additional suggestions.

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This product satisfies the Class B limits of EN55022, EN55024 and safety requirements of EN 60950.

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As an ENERGY STAR® Partner, Avision Inc. has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

*This machine is certified as Class 1 laser product. This means that this machine does not produce hazardous laser radiation.

System Requirements

- IBM compatible PC 586, Pentium or higher
- Microsoft Windows 2000, Windows XP, Windows Vista, Windows 7
- USB port 2.0 (compatible with USB 1.1)
- At least 100 MB of free hard disk space (500 MB is recommended)
- At least 128 MB of system memory (512 MB of RAM is recommended)

  At least 1 GB of RAM for Windows Vista/7
- A CD-ROM drive

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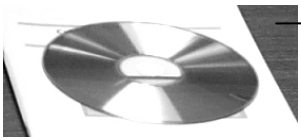
1. Introduction

Congratulations on your purchase of the color image scanner. With this scanner, you can scan documents at a fast rate to increase productivity.

Before you install and operate the new scanner, please take a few minutes to read through this manual. It provides proper instructions for you to unpack, install, operate and maintain the scanner.

The following figure indicates the package contents. Please check all the items against your checklist. If you do not receive all the items, please contact your authorized local dealer immediately.



1. Scanner
2. Quick guide/CD
3. USB cable

Note:
Please unpack the packing carefully, and check the contents against the checklist. If any items are missing or damaged, please contact your dealer immediately.

2. Scanner Installation

Precautions

- Keep the scanner out of direct sunlight. Direct exposure to the sun or excessive heat may cause damage to the unit.
- Do not install the scanner in a humid or dusty place.
- Place the scanner securely on an even, flat surface. Tilted or uneven surfaces may cause mechanical or paper-feeding problems.
- Retain the scanner box and packing materials for shipping purposes.

2.1 Installing the Scanner Driver and Cables

Note:

1. The Windows system CD may be required when installing on some PC's.
2. To ensure your computer can identify the USB scanner, please install scanner driver first before connecting the scanner to your computer.

2.1.1 Installing the Scanner Driver

1. Place the supplied CD-ROM onto your CD-ROM drive.
2. The software installation graphic appears. If not, run **"setup.exe"**.

CD Setup
Avision
A vision of your office
www.avision.com
To ensure the buttons work properly on the scanner, please FIRST install Button Manager before installing the scanner driver.
Install Button Manager
Install Scanner Driver
Install Adobe Reader
View Manuals
Exit

Contents on the installation graphic:

- **Install Button Manager**: To use the buttons on the scanner, you need to install Button Manager. To ensure Button Manager works properly, please FIRST install Button Manager before installing the scanner driver.
- **Install Scanner Driver:** To communicate with your scanner, you need to install the scanner driver. After installing the Button Manager software, click **Install Scanner Driver** to install the scanner **driver on your computer.**

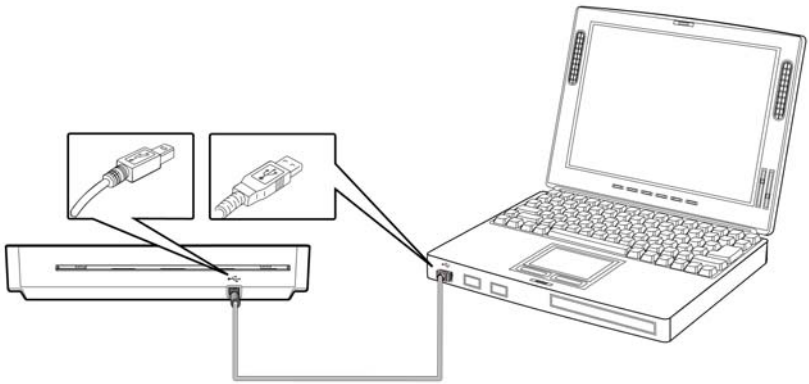
- **Install Adobe Reader:** To view the user's manuals for the scanner and Button Manager, you need to use Adobe Reader to open and view the manuals in PDF file format. If you already have Adobe Reader installed on your computer, you may disregard this item.
- **View Manual:** Click **"View Manual"** to view or print the detailed user manual for the scanner and Button Manager respectively.

3. Click **Install Button Manager** to install the Button Manager software and then click **Install Scanner Driver** to install the scanner driver on your computer.

2.1.2 Connecting to Computer

The scanner will get its power from the computer through the USB cable. Use the USB cable that came with the scanner to connect the scanner to the computer.

1. Connect the **square end** of the USB cable to the USB port of your scanner. Connect the **rectangle end** to the USB port of your computer.



2. The computer should detect a new USB device and prompt a **"New Hardware Found"** message.

3. In Windows 2000, confirms that the "**Search for a better driver."** is selected and click the **"Next"** button.

   In Windows XP, click the **Next** button to continue. When the XP certification screen appears, click **Continue Anyway** to complete the installation.

   In Windows Vista, click the **Recommended** option, and then click **Continue** button to complete the installation.

4. When the **Finish** dialog is prompted, click the **Finish** button.

5. Click **"View Manual"** to view or print the detailed user manual for the scanner and bundled applications respectively.

3. Completing Your First Scan

3.1 Placing Your Document

3.1.1 Notice on Using the ADF

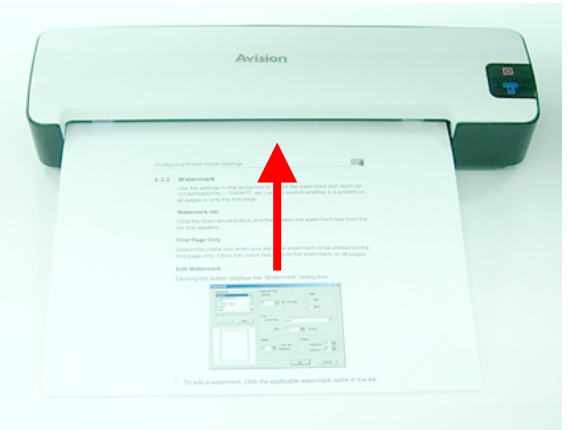
Before using the ADF, please make sure that your paper meets the following specifications:

- Document(s) can range in size from 2.9 by 2.1 inches to 8.5 by 14 inches (Legal).
- Document(s) can range in weight from 13.3 to 32 lbs (50 ~ 120 g/m^2)
- Plastic ID cad up to 1.25 mm thick
- Document(s) should be square or rectangular and in good condition (not fragile or worn).
- Document(s) should be free of curl, wrinkle, tears, wet ink, or punch holes.
- Document(s) should be free of staples, paper clips, paper sticky notes.

3.1.2 Loading Paper to the Paper Feed Slot

The scanner is a duplex scanner, which means it can scan one side of the page or both sides of the page at the same time. However, the scanner can only scan one page at a time.

1. To scan a single side of the page, insert the page facing up with the top of the page pointing to the paper feed slot.
2. To scan both sides of the page, insert the 1st page facing up with the top of the page pointing to the paper feed slot.
3. Align the original to the left side of the paper feed slot.



3.1.3 Loading A Card to the Paper Feed Slot

1. Place the card face up with the long dimension parallel to the paper feed slot and make sure the top of the card points to the paper feed slot.

2. Align the original to the left side of the paper feed slot.

Note:
This scanner is able to scan plastic ID cards from the front input tray. Plastic ID cards up to 1.25 mm (0.05 inch) thick.

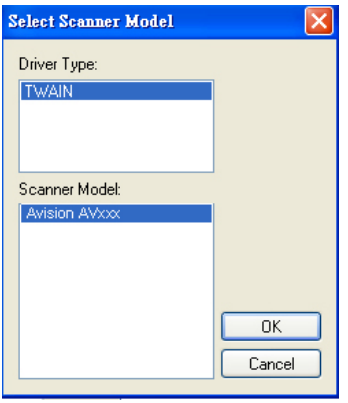
3.2 Verifying Your Scanner Installation

To verify if your scanner installation is correct, Avision provides you a useful test program called Avision Capture Tool. With this tool, you can perform simple scans and view the captured images. In addition, it helps you complete your scan at a rated speed.

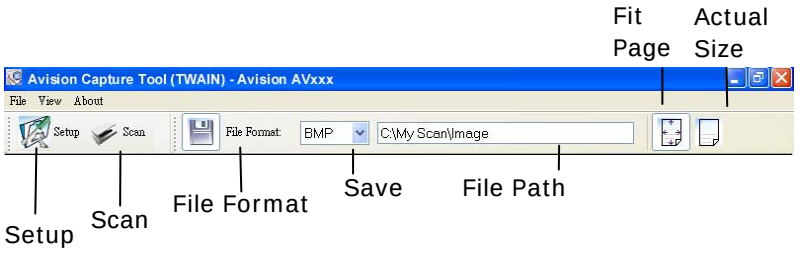
The following procedure describes how to verify your scanner installation. If the installation is not correct, please review the preceding section to check if the cable connection and scanner driver have been successfully installed.

Before you begin, be sure the scanner is on.

1. Select Start>Programs>Avision AVxxx Scanner>Avision Capture Tool.
   The Select Scanner Model dialog box will be displayed.



2. Select your driver type and scanner model and click OK. The following Avision Capture Tool dialog box will be displayed.



3. Choose your desired file format from the File Format drop down list box. (Default is BMP, other choice includes TIFF, GIF, and JPEG.)

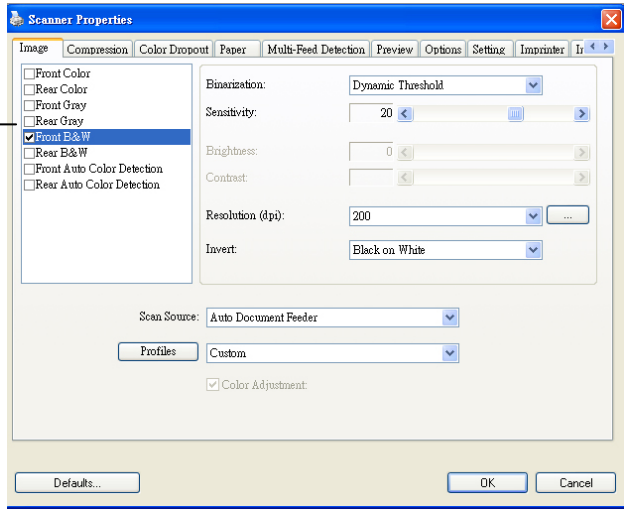
4. Type your desired folder name and file name in the File Path box. (Default is C:\My Scan\Image.)

Note: If you do not wish to save the scanned image, deselect the Save button since default is Save Enable. In this case, the thumbnail view will be disabled. And therefore, after viewing all the scanned images, only the last one will remain on the screen.

5. Click the Setup button (

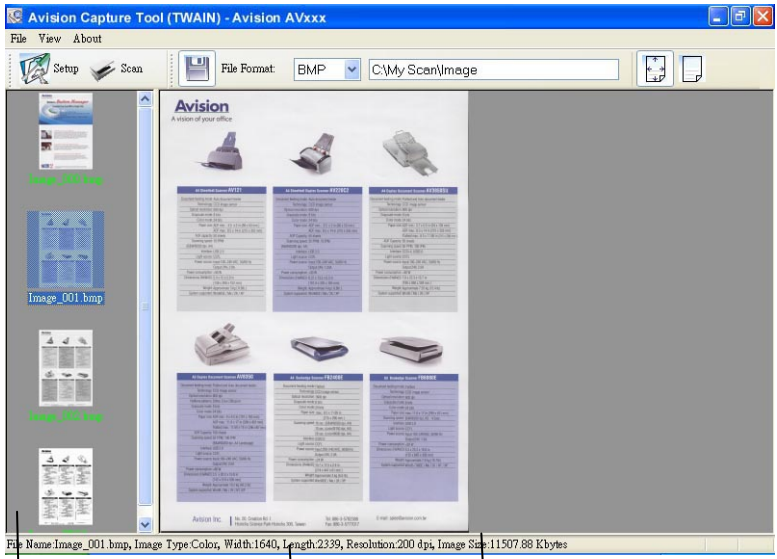
) or choose Setup from the File menu to prompt the Scanner Properties dialog box.

Image Selection Box



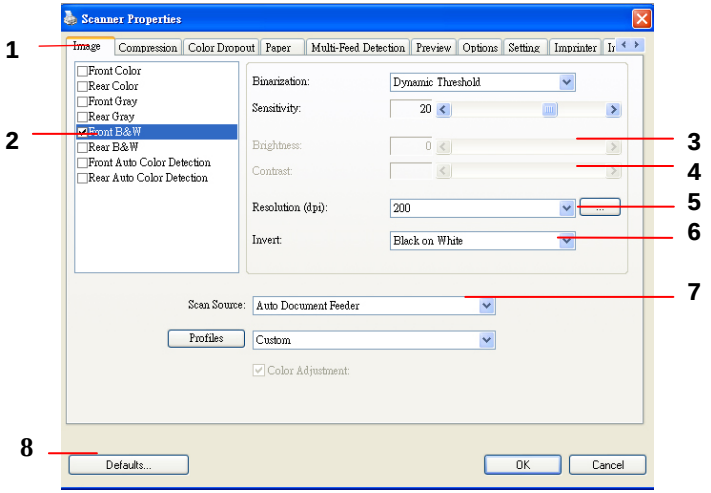
6. From the Image Selection Box, choose your desired image type for your scanned image. (Default is Front B&W) If you have a duplex scanner, choose Front and Rear to scan both sides of your document.
7. Click OK to quit the Scanner Properties dialog box. (To learn more details about the Scanner Properties dialog box, please see the subsequent chapter, *Using the Scanner Properties Dialog Box*.)
8. Place your document face down on the document glass or face up in the auto document feeder.
9. In the Scan Validation dialog box, click the Scan button (

) or choose Scan from the File menu.
10. The document will be scanned and displayed in the Scan Validation screen. After the scanned images have been displayed, your scanner installation verification is completed.



11. You can view the scanned image in Fit Page ( ) or Actual Size (100%) button ( ) from the Viewing toolbars at the right side.
12. Click the Close box or Quit from the File menu to exit the Scan Validation Tool.

3.2 A Glance of the Scanner Properties Dialog Box



1. Tab Options	Choice: Image, Compression, Color Dropout, Paper, Options, Settings, Information.
2. Image Selection Box	Choose your image type and the side of document you wish to scan. Options vary based on type of scanner.
3. Brightness:	Adjust the brightness level from –100 to +100.
4. Contrast	Adjust the contrast level from –100 to +100.
5. Resolution	Determine the quality of the scanned image. The industry standard is 200 dpi.
6. Invert	Reverse the color of your scanned image.
7. Scan Source	**Choice:** Auto Document Feeder, Flatbed, Flatbed (Book), Automatic (varies due to different scanner model)
8. Defaults	Reset all values on the tabs to the factory default settings.

3.3 Scan from the scanner button

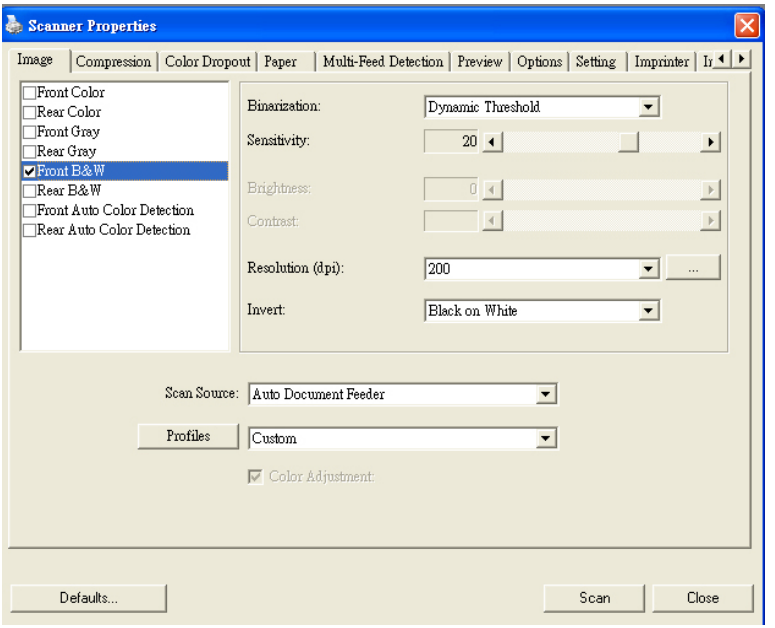
To scan using the scanner buttons, follow these steps:

1. Load the originals.

2. Press the Scan button to start a scan. The Scan Progress Window will be displayed and the scanned image will be saved in a default location or a user defined location.

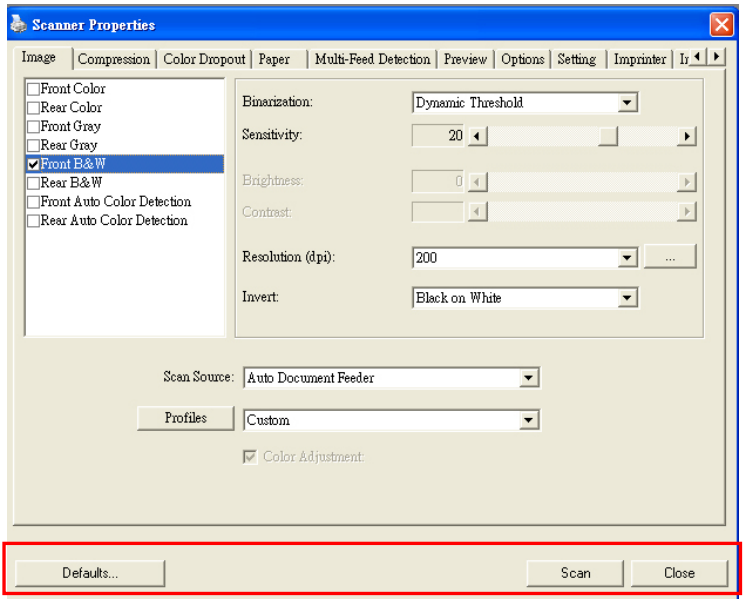
4. Using the Scanner Properties Dialog Box

The Scanner Properties dialog box allows you to configure the scanner's settings. It consists of several tabbed windows each of which will be described in this chapter.



The Scanner Properties dialog box

4.1 Buttons on the Scanner Properties Dialog Box



The buttons on the Scanner Properties dialog box

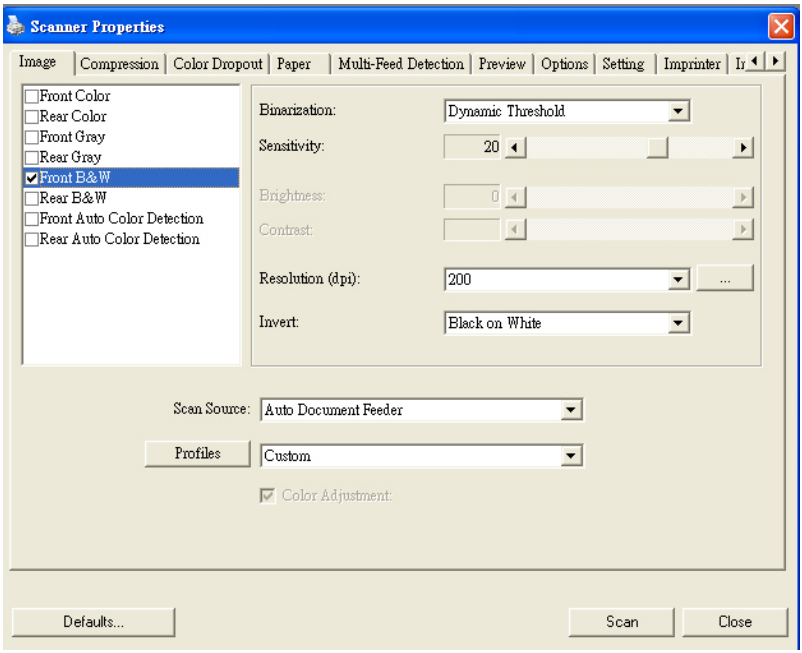
Buttons	Description
Defaults	Click the **Defaults** button, the factory default settings will be shown on each tab.
Scan	After all the scan settings are satisfactory, click the **Scan** button to start scanning your document.
Close	Click the **Close** button to leave the Scanner Properties dialog box.

The following table shows the default settings：

Tab name	Default settings
Image	Image：Front B&W Binarization：Dynamic Threshold Resolution：200 dpi Invert：Blank on White Scan Source：Auto Document Feeder Threshold：None Brightness：None Contrast：None
Compression	None
Color Dropout	None
Paper	Cropping：Automatic Deskew：Yes Orientation：Portrait OverScan：0.00 Multifeed Detection：None Unit：Inch
Options	Rotation Degrees：None Blank Page Removal：None Edge Fill：White，0 mm Image Control Option：None
Setting	Enable Energy Saver：Enable, 15 minutes after last scan action Show Scanning Progress：Yes Show Warning Message：Yes Save Settings after Closing：Yes

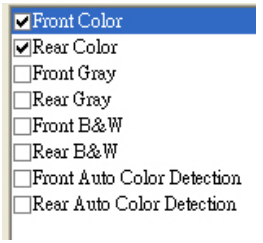
4.2 The Image Tab

The Image tab allows you to choose the front side and (or) the rear side of your document, the type of image, and to set several basic scan settings. Note that except for the resolution, you can set individual scan settings for the front side and the rear side. For example, all settings in the Image tab, Compression tab, Color Dropout tab can be set individually for the front and the rear side. However, the settings in the Paper tab, the Option tab, and the Setting tab have to be set the same for the front and rear side.



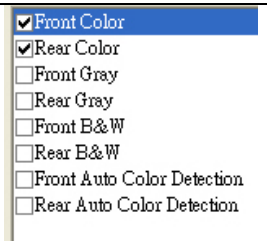
The Image tab dialog box

4.2.1 The Image Selection Box



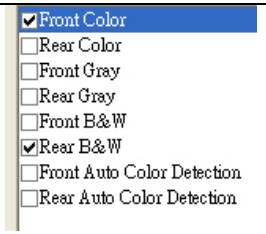
The Image Selection box includes the image type and document side option. If you wish to scan both the front side and the rear side of your color document, you can check both Front Color and Rear Color at the same time. Note the options vary based on type of scanner.

Example 1：Scanning a two-sided color document, both sides in color

 Side/Image Selection	Front	Rear

1

Example 2 : Scanning a two-sided color document, one in B&W(Drop Blue Color : Threshold : 10, Background : 79), the other in color



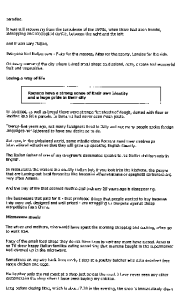
Side/Image Selection

Front

Rear

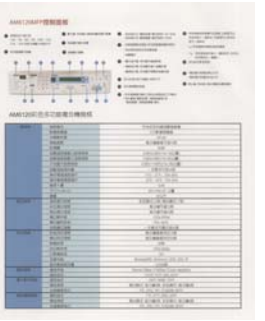
2

Image Type	Description
Color	Choose Color if you wish to scan a color image for your original in color.
Gray	Choose Gray image if your original contains actual shades of gray.
B&W	Choose B&W if your original contains only text, pencil or ink sketch.



B&W

Gray



Color

Front/Rear Auto Color Detection:

Click to automatically detect and scan the front or the rear page of your color document in color image mode. If your document is in colors, the scanner will automatically scan the document into a color image. If your document is non-color, you can choose the output to be either B&W or Gray from the Non-Color Selection option. This option is useful when you have a mixture of color and non-color document.

Note: If you choose Front Rear Auto Color Detection, you can not specify the image mode of your rear page and vice versas.

Sensitivity of Auto Color Detection

If your documents contain primarily B&W text and small amount of light or pale colors and you do not wish them to be recognized as color image to save the file size, you can reduce the sensitivity value by moving the bar to the left to let these images to be detected as B&W. The value ranges from 1 to 30. The default is 20.

4.2.2 Other Image Options

Binarization This is the process of converting a grayscale or color image to a bi-tonal image. There are several different methods of performing this conversion. **Options: Dynamic Threshold, Fixed Processing, Halftone 1~5, Error Diffusion**.

Dynamic Threshold: Selecting **Dynamic Threshold** allows the scanner to dynamically evaluate each document to determine the optimal threshold value to produce the highest quality image. This is used to scan mixed document containing faint text, shaded background, or color background with a single setting. If Dynamic Threshold is selected, Threshold, Brightness, and Contrast are not available.

Sensitivity of Dynamic Threshold

Occasionally your scanned image may contain small dots or speckles. To remove these spots, increase the sensitivity value by moving the bar to the right. The value ranges from 1 to 30. The default is 20.

Fixed Processing: Used for black-and-white and other high contrast documents. A single level is set to determine the black-and-white transition. The threshold is programmable over the entire density range. **Fixed Processing** sets Contrast to 0. If **Fixed Processing** is selected, Contrast is not available.

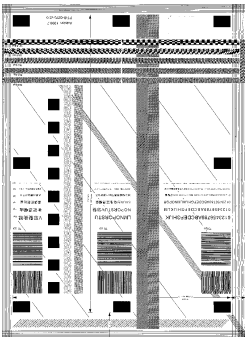
Halftone: In addition to the black and white display, Halftone can present a somehow gray shade of image by using different size of dots. Halftone image looks like the picture we have seen in the newspaper. **Options include Halftone 1, Halftone 2, Halftone 3, Halftone 4, Halftone 5.**

Error Diffusion: Error Diffusion is a type of Halftone. Error Diffusion gives good image texture and makes text in images more readable than Halftone.

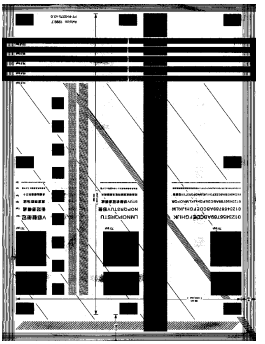
Halftone Image

Error Diffusion Image

Threshold Used to convert a grayscale image to a bi-tonal image. The value ranges from 0 to 255. A low threshold value produces a lighter image, and can be used to subdue backgrounds and subtle, unneeded information. A high threshold value produces a darker image, and can be used to help pick up faint images.
Adjust the threshold setting by dragging the Threshold sliding bar to the left or right to achieve the desired threshold setting.



200 dpi, Threshold:80, Brightness: 0



200 dpi, Threshold:170, Brightness: 0

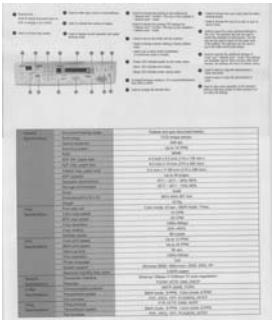
Gray

Document Type: Choice: Normal, Photo, Document

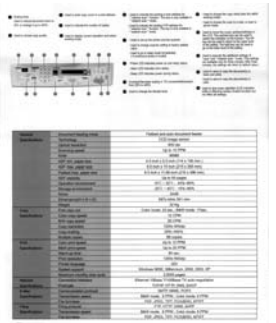
Three options of document type are provided when you choose Gray as the image type for your scanned document. Choice: Normal, Photo, Document.

- **Document:** Choose Document if your original contains pure text or a mixture of text and graphic since it is an optimal setting for regular business document. When using Document, only Threshold can be adjusted.
- **Photo:** Choose Photo if your original contains photo to reproduce your photo in vivid grayscale image. When using Photo, no Threshold and Contrast can be adjusted.
- **Normal:** When using **Normal**, Threshold, Brightness, and Contrast can be adjusted.

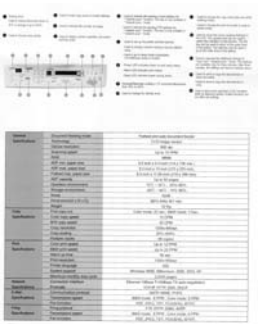
Threshold: The value ranges from 0 to 255. The default is 230. A low threshold value produces a lighter image, and can be used to subdue backgrounds and subtle, unneeded information. A high threshold value produces a darker image, and can be used to help pick up faint images. Adjust the threshold setting by dragging the **Threshold** sliding bar to the left or right to achieve the desired threshold setting.



Normal



Photo



Document (Threshold: 230)

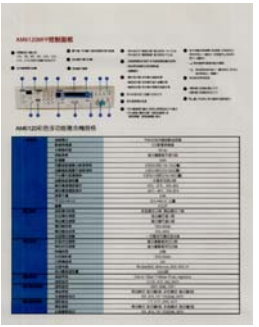
Normal

Photo

Document (Threshold: 230)

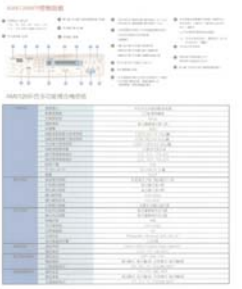
Brightness Adjusts the lightness or darkness of an image. The higher the value, the brighter the image. Drag the slider to the right or left to increase or decrease the brightness. The range is from –100 to +100.

Contrast Adjusts the range between the darkest and the lightest shades in the image. The higher the contrast, the bigger the different grayscale. Drag the slider to the right or left to increase or decrease the contrast. The range is from –100 to +100.

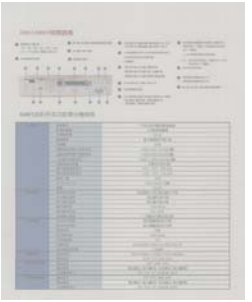


Brightness: -50

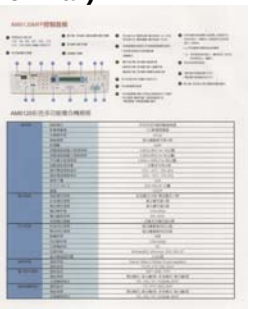
Brightness: 0 (Normal)



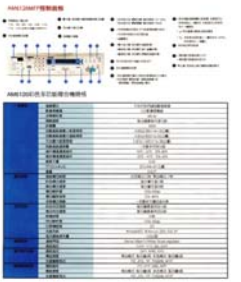
Brightness: +50



Contrast: -50



Contrast: 0 (Normal)



Contrast: +50

Resolution

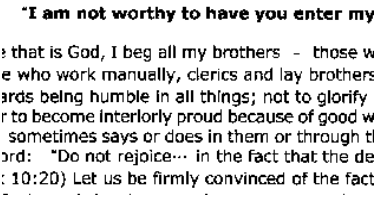
A good control of the resolution results a good detail of an image that scans. The resolution is measured by dots per inch (dpi). Normally, the greater the dpi number, the higher the resolution and the image file size. Be aware that greater resolution takes more time to scan, and more disk space for the scanning image. For your information, an A4 size color image scanned at 300 dpi at True Color mode consumes approximately 25 MB of disk space. A higher resolution (usually means over 600 dpi) is only recommended when you need to scan a small area at True Color mode.

Choose a resolution value from the drop down list. The default value is 200 dpi. Available resolutions are 75, 100, 150, 200,300, 400 and 600. Or you may choose your desired value by clicking the box in the right side of the drop down list and press the arrow key to select your desired value and then click the Add button to include it in the drop down list. **Note:** The resolution is up to 300 dpi if an imprinter or a MICR reader is installed or connected to the scanner.

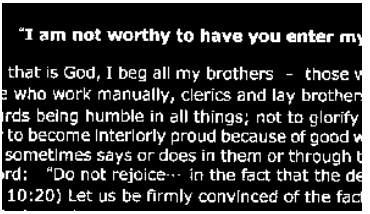
Resolution: 75 dpi

Resolution: 150 dpi

Invert Reverses the brightness and the colors in the image. The default setting is Black on a White background. Reverse mode is White on a Black background. For color images, each pixel will be changed into its complementary color at the command of Invert.


"I am not worthy to have you enter my
that is God, I beg all my brothers - those w
who work manually, clerics and lay brothers
ards being humble in all things; not to glorify
to become interiorly proud because of good w
sometimes says or does in them or through tl
ord: "Do not rejoice··· in the fact that the de
10:20) Let us be firmly convinced of the fact

Black on White


"I am not worthy to have you enter my
that is God, I beg all my brothers - those w
who work manually, clerics and lay brothers
irds being humble in all things; not to glorify
to become interiorly proud because of good w
sometimes says or does in them or through t
ord: "Do not rejoice··· in the fact that the de
10:20) Let us be firmly convinced of the fact

White on Black

Scan Source

Choice:

- **Auto Document Feeder:** Used to scan multiple pages.
- **Flatbed:** Used to scan a single page. For example, pages from newspaper clipping, paper with wrinkles or curls.
- **Flatbed (book):** Used to scan several inside pages from book.
- **Automatic:** Allow the scanner automatically set its scan source. If **Automatic** is selected and there is document in both the auto document feeder (ADF) and the flatbed, then the scan source will be automatically set to ADF. If **Automatic** is selected and there is document only in flatbed, then the scan source will be set to flatbed.
- **Merge Two Sides into One Image:** If you have a sheet-fed duplex scanner with front input tray, you can scan an A3 size document with an innovative method. Thus, fold your A3 size document into A4, and then load the paper in the front tray. Choose Merge Two Sides from the Scan Source option and then the scanner is able to scan both sides of your document and merge two A4 images into one A3 image.

  When you select Merge Two Sides into One Image, the Cropping or Multi-feed function will be disabled.

Note the options vary based on type of scanner.

Color Matching

The purpose of Color Matching is getting the accurate color. This option uses the default parameters (ICC profile) to adjust the colors of the image.

Normal

After Color Matching

4.2.3 Scanning color images

The following options are available for scanning color images.

- Brightness
- Contrast
- Resolution
- Invert

4.2.4 Scanning grayscale images

The following options are available for scanning gray images.

- Brightness
- Contrast
- Resolution
- Invert

4.2.5 Scanning B&W images

The following options are available for scanning B&W images.

- Binarization (Dynamic Threshold)
- Resolution
- Invert

Or

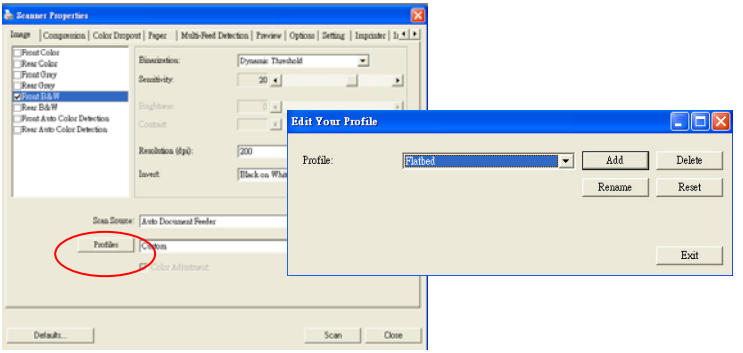
- Binarization (Fix Processing)
- Threshold
- Brightness
- Resolution
- Invert

4.2.6 Editing Profiles

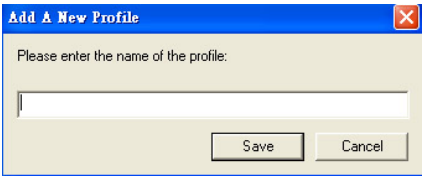
The Scanner Properties dialog box allows you to change and save your frequently used scan settings into a profile. You can edit these profiles by renaming or deleting them.

To add a new profile,

1. Customize your settings. (For example, change your resolution, image type, cropping method, scan size, or other scan settings.)
2. Click the Image tab and then choose “Profiles” to prompt the “Edit Your Profile” dialog box.



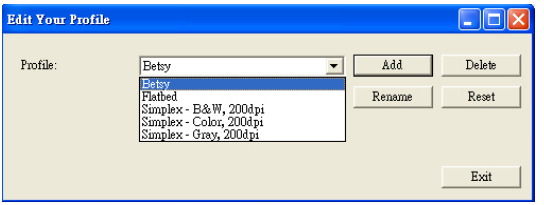
3. Click “Add” to enter the name of the profile and then choose “Save”.



4. The new profile will be saved and shown in the “Profiles” dropdown list box.

To load a profile,

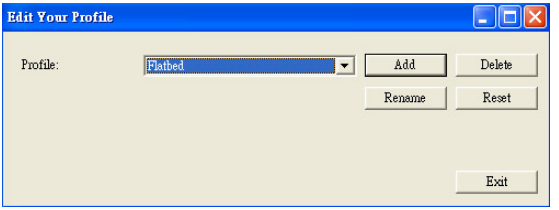
1. From the Image tab dialog box, choose your favorable profile from the “Profiles” dropdown list box.



2. Your favorable profile will be immediately loaded and displayed on Scanner Properties dialog box.

To delete a profile,

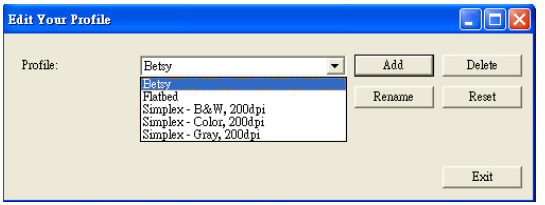
1. From the Image tab dialog box, click “Profiles” to prompt the Edit Your Profile dialog box.



2. Choose the profile you want to delete from the dropdown list box.
3. Click “Delete”. A Confirm message “Are you sure you want to delete this profile?” is prompted.
4. Choose “Yes” to delete or “Cancel” to quit.

To rename a profile,

1. From the Image tab dialog box, click “Profiles” to prompt the Edit Your Profile dialog box.



2. Choose the profile you want to rename from the dropdown list box and then click the Rename button.

3. Enter new name for the profile.

4. Choose “Save” to save the new profile or “Cancel” to quit.

Note:
The preset default profiles include Flatbed, Simplex-B&W, 200 dpi, Simplex-Gray, 200 dpi, Simplex-Color, 200 dpi, Duplex-B&W, 200 dpi, Duplex-Gray, 200 dpi, Duplex-Color, 200 dpi. If you have a simplex or a sheetfed scanner, the duplex or the flatbed option will not be available.

4.3 The Compression Tab

The Compression tab allows you to compress your scanned image and choose the level of compression. Bi-tonal images are normally compressed using CCITT standard called Group 4 (G4). Color and grayscale images are often compressed using JPEG technology. Move the **JPEG Quality** slider to the right or left to increase or decrease the level of compression. Note the greater the compression level, the lower image quality. Default is 50%.

Note that the compression depends on your image editing application. If your image editing application does not support the type of compression format, then either a warning message will appear or the image quality of the compressed file will not be acceptable.

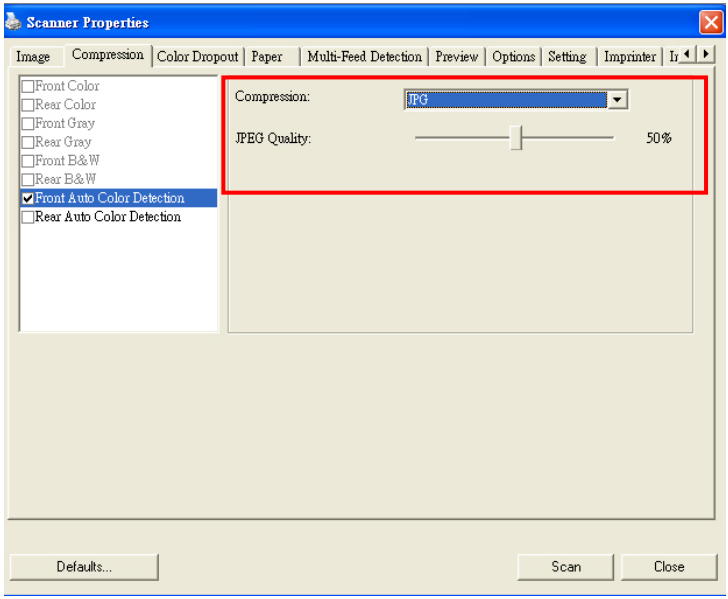
JPEG (Joint Photographic Editor Group): This group developed and lent their name to a file compression standard for color and grayscale images that is widely used by scanners, and software applications. On Microsoft Windows-based systems, a file with the extension .jpg has normally been compressed using this standard.

For scanning color or gray images, the following compressions are available:

- None
- JPEG

For scanning B&W images, the following compressions are available:

- None
- G4



The Compression tab dialog box

4.4 The Color Dropout Tab

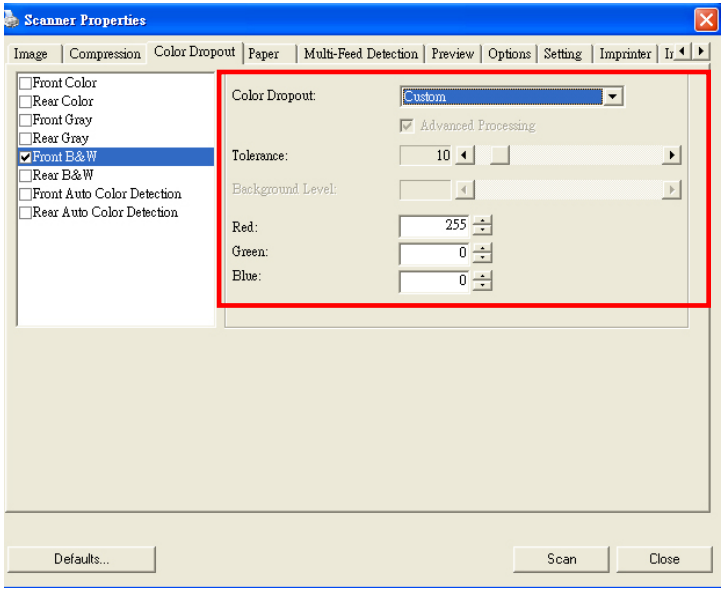
4.4.1 Color Dropout Selection

Color Dropout tab allows you to drop either of the red, blue, or green color in your scanned image. If your image contains red color watermark or background, choose the R (Red) channel then any red watermark or background will be removed. This feature is used to sharpen your text when using OCR (Optical Character Recognition) software.

The “Custom” option allows you to specify your desired color to be removed by entering its RGB (Red, Green, and Blue) value respectively.

Tolerance: Specify the allowable color range to be removed for the color you selected. Specified range: 1 ~ 100
The large the numeric value, the wider the color dropout range is.

Note that this function supports only black & white and gray images. Therefore, be sure to choose any black & white or gray image type while applying this function.



The Color Dropout dialog box

4.4.2 Other Color Dropout Options

Advanced Processing provides two options that can adjust your scanned image in the best optimal result.

Filter Threshold	This value is used to determine the color which will be dropped out. A lower value will drop more of the selected color out, while a higher value will leave more of the selected color in.
Background Level	The pixel which is higher than the background value will be adjusted to the lightest point. Adjust the value for both the Filter Threshold and Background Level to produce the best optimal result.

Example, slightly adjusting the background value makes your text more clear.

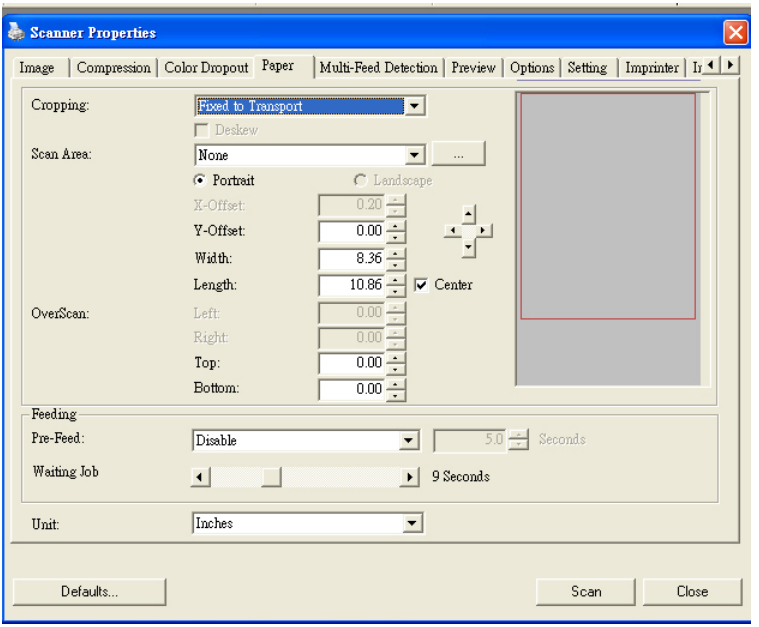
Original

Remove Blue, Threshold: 20, Background: 255

Remove Blue, Threshold: 20, Background Level: 210

4.5 The Paper Tab

The Paper tab allows you to define values relating to image output (i.e., Auto Crop or not, Scan Area, OverScan, Multi-Feed Detection).



The Paper tab dialog box

4.5.1 Cropping

Cropping allows you to capture a portion of the document being scanned. **Choice: Automatic, Fixed to Transport, EOP (End of Page) Detection.**

Options	Description
Automatic	Automatic adjusts the cropping window according to different document sizes. Use this option for batches of mixed-sized documents.
Fixed to Transport	This feature allows you to define the area or zone to be imaged. Use for batches of same-sized documents. If you select this option, you can use the arrow keys to define the x and y offset values, width and length to redefine your scanned area. The Display window will show image placement as you change the values.
EOP (End of Page) Detection	This feature allows you to define the area or zone to be imaged. Use for batches of same-width but different length documents. If you select this option, you can use the arrow keys to define the x and y offset values, width and length to redefine your scanned area. The Display window will show image placement as you change the values.

Automatic Multiple	This option allows you to place various sized documents such as photos, ID Cards, or business cards on the flatbed (if available) and lets you create multiple individually cropped images in one scan. Note: To correctly create multiple images, please make sure there is at least 12mm (0.5”) of space between each document.

The following options are only available when **Fixed to Transport** is selected.

- **X-Offset** — the distance from the left end of the scanner to the left edge of the scanning area.
- **Y-Offset** — the position from the top end of the document to the top end of the scanning area.
- **Width** — the width of the scanning area.
- **Length** — the length of the scanning area.
- **Center:** automatically calculates the x-offset for center-fed feeding based upon document size selected.
- — relocate the scan area by click the arrow key on the cross sign while retain the scan size. View the result from the Display window.

4.5.2 Other Paper Selection

Deskew

Use this option to automatically deskew a document.

Note: If the skew angle is too great, some of the image may be cut off.

Scan Area

Choose your desired paper size with the drop-down list box. Or you may select a custom paper size by clicking the **Scan Area** box and then click **Add** to include in the choice.

Choice: None, US Letter- 8.5"x 11", US Legal – 8.5" x 14", ISO A4 – 21 x 29.7 cm, ISO A5 – 14.8 x 21 cm, ISO A6 – 10.5 x 14.8cm, ISO A7 – 7.4 x 10/5 cm, ISO B5 – 17.6 x 25 cm, ISO B6 – 12.5 x 17.6 cm, ISO B7 – 8.8 x 12.5 cm, JIS B5 – 18.2 x 25.7 cm, JIS B6 – 12.8 x 18.2 cm, JIS B7 – 9.1 x 12.8 cm, Scanner Maximum, Long Page.

Long Page:
When you need to scan documents whose length exceeds scanner maximum, please choose Long Page. Note if Long Page is selected, the Multi-Feed Detection will not be available. Options: Unknown Length, Enter Length (Note: This option varies due to type of scanner.)

Choose “Unknown Length” if you have a batch of long page document with unknown length. Choose “Enter Length” to enter the length and width of your documents or your desired scan size on documents. This is useful when you have a batch of documents with the same scan size or a batch of same-sized documents.

OverScan

Overscan allows you to add a specific margin at top and bottom or right and left (Options vary based on the type of scanner) of the edge of the image. This is used to reduce possible corner clipping on the skewed images and often applied to a batch of skewed document to be scanned in the auto document feeder. Select a value between 0 and +5 mm. Note the overscan result will not be shown in the Display window and that the availability of the function varies based on type of scanner.

Pre-Feed

Choice: Enable, Disable. If enable is selected, you can set the amount of time the scanner starts pre-feeding your paper after your documents has been loaded into the feeder. The default is disable.

Transport Timeout

Set the amount of time the scanner will wait and then start auto scan after the first scan job is completed. If you have many separate documents need to be scanned at the same scan settings, this feature is especially useful. The default is 0. The value ranges from 0 to 30 seconds.

Note:

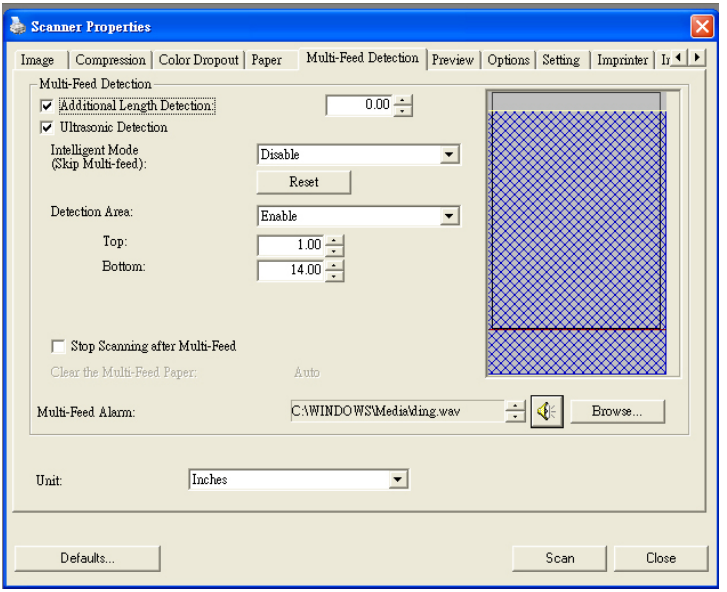
1 Within the specified timeout period, if you load your document to the feeder, the scanner starts scanning automatically.

2 If your scanner has a flatbed option and you place your paper on the flatbed, after the timeout period, you need to click the Scan button on the TWAIN user interface to start scanning.

4.6 The Multi-Feed Detection Tab

Multi-Feed Detection

Multi-Feed Detection allows you to detect overlapped document that go through the auto document feeder. Multi-Feed usually occurs due to stapled documents, adhesives on documents, or electro-statically charged document. Note： The availability of the function varies based on type of scanner.



Additional Length Detection
Additional Length Detection allows you to define the length of document being multi-fed. This value indicates the additional length exceeding your scan area. The Display window will show the size of the document as you change the value. A value of 0 indicates no additional length detection. The Additional Length Detection is best used when scanning same-size documents in the auto document feeder.

Intelligent Mode (Skip Multi-Feed) By Ultrasonic Detection
Some documents which are glued with a photo or a label may easily be detected as multi-feed yet you wish to bypass these multi-feed conditions. In this case, you can use the intelligent mode to let the scanner memorizes and skips these multi-feed conditions. **Choice includes Disable, By Length, By Position, By Length+Position. Note: The availability of this feature varies based on type of scanner.**

By Length: When a multi-feed is detected for the first time, the scanner memorizes the length of the paper attached to the document. When you perform next scanning, this pattern of multi-feed will be bypassed.

By Position: When a multi-feed is detected for the first time, the scanner memorizes the position of the paper attached to the document. When you perform next scanning, this pattern of multi-feed will be bypassed.

By Length+Position: When a multi-feed is detected for the first time, the scanner memorizes the length and position of the paper attached to the document. When you perform next scanning, this pattern of multi-feed will be bypassed.

To use the intelligent mode,

1. Choose your desired multi-feed detecting method to bypass by.
2. When multi-feed occurs during scanning, a multi-feed message appears.
3. Press the **Scan** button on the scanner. The LED indicator first turns to red color and then stays in green color.
4. Click **OK** to close the multi-feed message.
5. Open your TWAIN data source in your scanning application. The same multi-feed condition will not be recognized as multi-feed.

Note:

1. You can clear the previous multi-feed conditions by clicking the **Reset** button.
2. The scanner can memorize to bypass up to 25 multi-feed conditions.
3. If you uninstall your scanner driver, the previous multi-feed conditions which have been set to memorize and skip will still be valid.

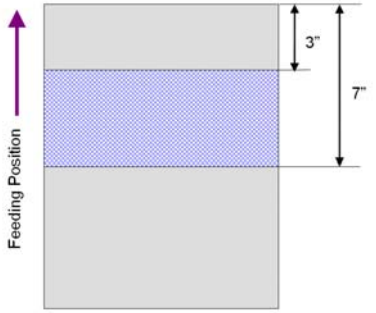
Detection Area

This option allows you to specify a multi-feed detection area.

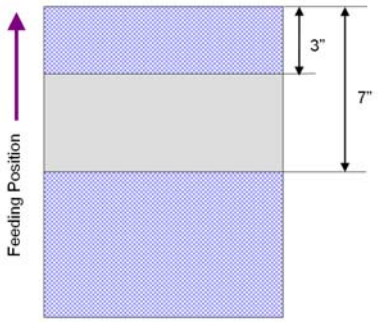
To specify a multi-feed detection area,

1. Choose **Disable** from the Intelligent Mode. The Detection Area will be enabled.
2. Choose **Inside the Range** or **Outside the Range**. The detection area will be highlighted.
3. Drag your mouse pointer on the top or the bottom of the detection area to specify your area in the display window. Or you may use the up and down arrow key of the Top and Bottom to change its size. The Top indicates the starting position of the detection range. The Bottom indicates the ending position of the detection range. Note the top value and the detection range has to be at least 1 inch.

Detection Area: Inside the Range, Box, Top: 3", Bottom: 7"



Detection Area: Outside the Range, Box, Top: 3”, Bottom: 7”



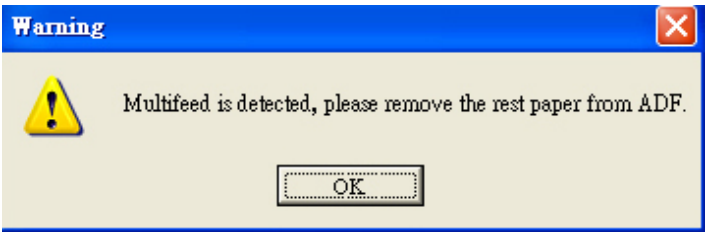
Ultrasonic Detection

Ultrasonic Detection allows you to set overlapped document by detecting paper thickness between documents. **Note： The availability of the function varies based on type of scanner.**

There are two options available if Multi-Feed is detected.

- **Stop Scanning after Multi-Feed**

  If this is selected, the scanner will stop the feeder and display the following Warning dialog box if multi-feed is detected.



Action:

1. Follow the instruction on the Warning dialog box to remove the rest pages on the feeder.
2. Click OK to close the Warning dialog box.
3. Scan the rest pages.

Clear the Multi-Fed Paper:

Choice: Manual, Auto

If Auto is selected, once multi-feed is detected and scanning operation is stopped, the scanner will automatically clear the transport of the multi-fed paper. If manual is selected, once multi-feed is detected and scanning operation is stopped, you need to manually clear the transport of the multi-fed paper. **Note: The availability of this option varies based on type of scanner.**

- **Multi-Feed Alarm**

  If a wave file is added, the scanner will make a sound alarm if multi-feed is detected yet no Warning dialog box will be displayed.

  If “Stop Scanning after Multi-Feed” is selected, the scanner will stop the feeder.

  If “Stop Scanning after Multi-Feed” has not been selected, the scanner will continue to scan till the end of your document.

  Action:

  1. If “Stop Scanning after Multi-Feed” is selected, follow the action described in the preceding section “Stop Scanning after Multi-Feed” on the previous page to complete your job.
  2. If “Stop Scanning after Multi-Feed” has not been selected, rescan the pages where multi-feed is detected.

How to add the sound alarm：

1. Click the Browse button on the right side of the speaker icon. The Open dialog box appears.
2. Choose your wave file.
3. Click the Open button. The wave file is added.

Units

Defines the primary measurement system. **Inches, Millimeters,** and **Pixels** are available.

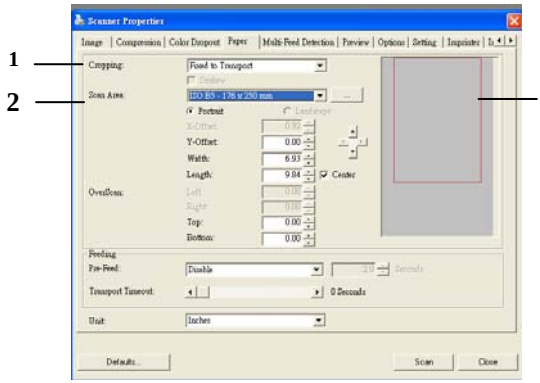
4.6.1 Relative to Document

Relative to Document: (used for batches of same-sized documents)

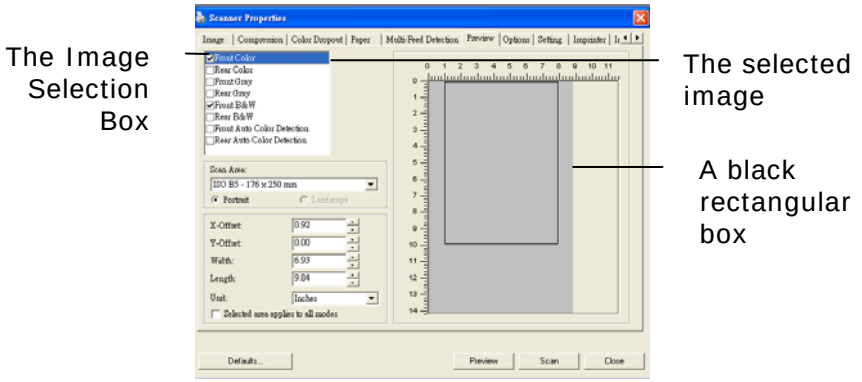
This option allows you to crop different areas on your documents and deliver these images in B&W, Gray, or Color separately. For example, there are applications which require you to store the entire document in B&W and a part of the document in color to save storage space. This is useful for documents where a photograph or signature appears in a consistent area on the document such as resumes, and so on.

The following procedure describes how to reproduce the entire document in B&W and a portion of document (picture) in color.

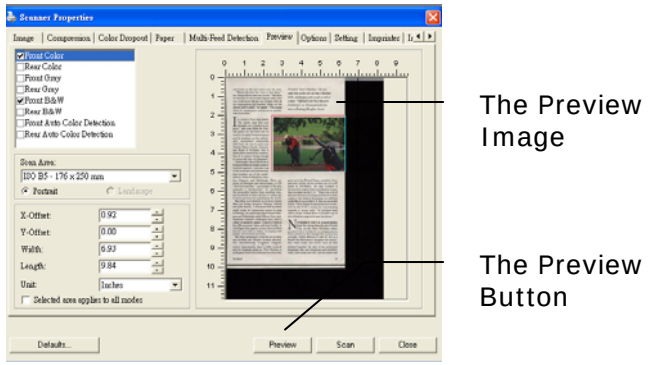
1. On the Paper tab, choose “Relative to Document” or “Fixed to Transport” from the Cropping option.
2. Choose your scan size from the Scan Area option. The selected scan size will be displayed in a red rectangular box. This is also the scan size of your entire document. (For example, ISO B5. If you have not chosen a scan area and leave the selection as None, then the default area will be the scanner’s maximum.)



3. Click the Preview tab to display the Preview window. A black rectangular box appears to indicate the max. scan size your have just selected.

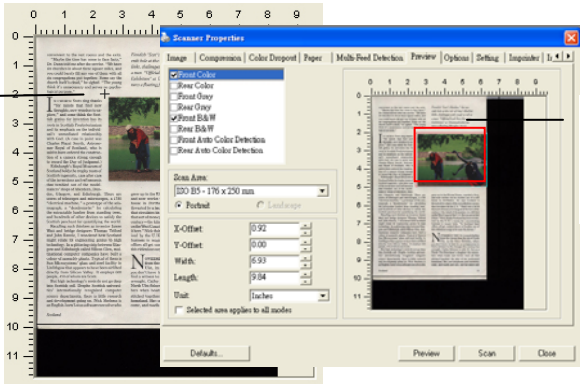


4. Click the Preview button to view the entire image in low resolution to correctly crop your relative scan area.



5. Select image type from the Image Selection box. The selected image will appear in highlighted color. (For example, Front Color)

6. Place your cursor on the Preview window and click your left mouse button. A cross sign will appear as illustrated. Create your relative scan size diagonally by dragging the left mouse button to your preferable size. The selected area will appear in a red box as illustrated.



7. Check the B&W image from the Image Selection box to scan the entire document.
8. Click the Scan button to start scanning the document in two image types and sizes. (See the result in below.)

convenient to the rest rooms and the exits.

"Maybe the time has come to face facts," Dr. Dunn told me after the service. "We have six churches in about three square miles, and you could barely fill any one of them with all six congregations put together. Some say the church itself is dead," he sighed. "The young think it's unnecessary and serves no psychological purpose."

IN CHURCH Scots sing thanks "for minds that find new thoughts, new wonders to explores," and some think the Scottish genius for invention has its roots in Scottish Presbyterianism and its emphasis on the individual's unmediated relationship with God. (A case in point was Charles Piazzi Smyth, Astronomer Royal of Scotland, who is said to have ordered the construction of a camera strong enough to record the Day of Judgment.)

Edinburgh's Royal Museum of Scotland holds the trophy room of Scottish ingenuity, case after case of the inventions and refinements that tumbled out of the model-makers' shops of Aberdeen, Dundee, Glasgow, and Edinburgh. There are scores of telescopes and microscopes, a 1780 "electrical machine," a prototype of the seismograph, a "deadrometer" for calculating the extractable lumber from standing trees, and hundreds of other devices to satisfy the Scottish penchant for quantifying the world.

Recalling such thinkers as inventor James Watt and bridge designers Thomas Telford and John Rennie, I wondered how Scotland might relate its engineering genius to high technology. In a glittering strip between Glasgow and Edinburgh called Silicon Glen, multinational computer companies have built a colony of assembly plants. Typical of them is Sun Microsystems' glass-and-steel facility in Linlithgow that appears to have been airlifted directly from Silicon Valley. It employs 600 people, 450 of whom are Scots.

But high technology's roots do not go deep into Scottish soil. Despite Scottish universities' internationally recognized computer science departments, there is little research and development going on. Nick Shelness is an English-born Lotus software executive who grew up in the United States, married a Scot, and now works via his modem out of a mill house in Perthshire. He says Scotland is thwarted by a lack of the serendipitous money that circulates in the U.S. "There was a lot of that sort of money in Glasgow at the turn of the century—the kind of dynamism you still find on the West Coast of the U.S. But you never feel it here." Nick thinks Scotland has been victimized by the U.K.'s mania for concentrating business in major hubs. "In Scotland head offices all get sucked down to London out of this ridiculous urge to be near the throne."

NOWHERE IN THE U.K. is much farther from the throne than the isle of North Uist, in the Outer Hebrides, where you don't have to look for an octogenarian to find a witness to the changes this century has wrought. Cathy Johnson is only 35, but as a North Uist fisherman's daughter she remembers when boats and ferries were all that stitched together the isles of her perforated homeland. She saw telephones and electricity come, and roads and cars, and hot water and

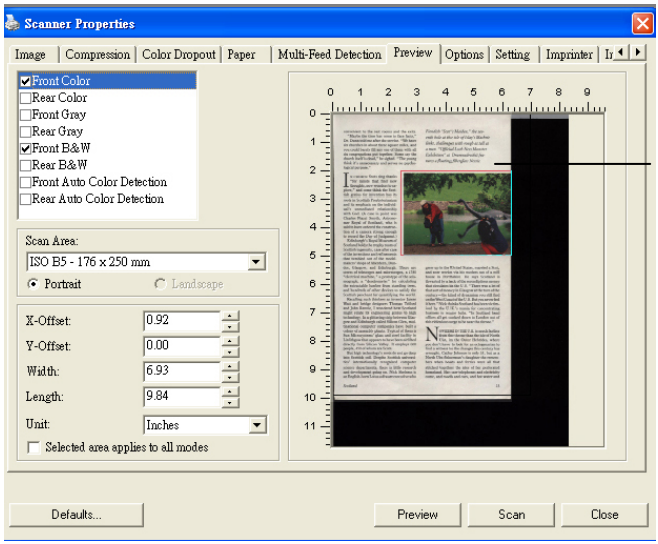
Fiendish "Scot's Maiden," the seventh hole at the isle of Islay's Machrie links, challenges with rough as tall as a man. "Official Loch Ness Monster Exhibition" at Drumnadrochit features a floating fiberglass Nessie.

The entire document in B&W The relative area in color

4.7 The Preview Tab

The Preview tab allows you to preview (a low-resolution scan) your image before final scan. This preview image lets you allocate your scan area. You can choose your scan area by the "Scan Area" drop down list box or placing your cursor on the Display window and dragging it diagonally on the Display window. Then, a red rectangle box will appear to indicate the selected area.

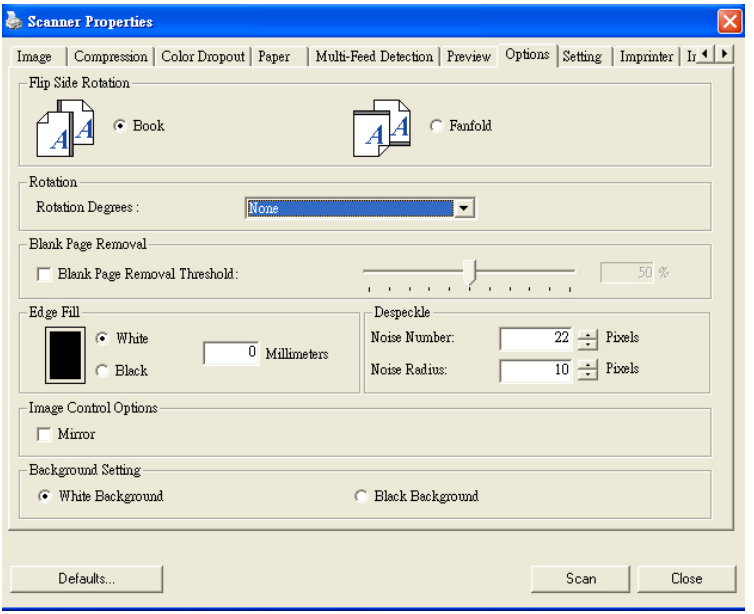
Note: If you choose "Automatic Cropping" on the "Paper Tab", then to select a scan area on the Preview tab is not allowed.



The Preview Tab

4.8 The Options Tab

The Options tab allows you to set following additional image processing settings.



The Option tab dialog box

Flip Side Rotation

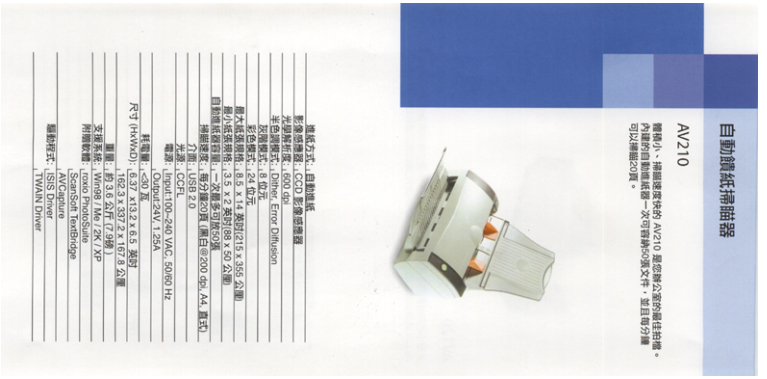
Select “fanfold” to rotate the image of the reverse side to 180 degrees.

This is applied to double-sided document which are viewed in portrait are sometime fed into the scanner in landscape or vice versa.

Choice: Book, Fanfold.

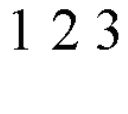
If “Book” is selected, the image of the reverse side will not be rotated.

The following illustration shows the documents which should be viewed in portrait are fed into the scanner in landscape



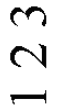
Rotate Image Choose the rotation angle from the drop down list if you wish to rotate your scanned image.

Choice: None, 90°CW(clockwise), 90°CCW(counter clockwise), 180°, Auto based on contents, Auto rotate every even page.



Original

Rotate 90°CW



Rotate 90°CCW

Rotate 180°

Auto based on contents: When **Auto based on contents** is selected, images can be rotated to their proper orientations based on their contents.

Auto rotate every even page: Automatically rotate 180**°** on every even page. This is especially useful when you scan the inside pages from a book. As a result, if you choose "Flatbed (book)" from the "Scan Source" option, "auto rotate every even page" will be selected as default.

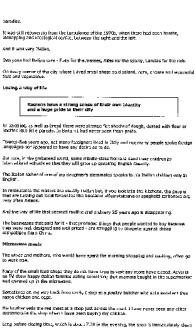
Note: Option varies based on type of scanner.

Blank Page Removal

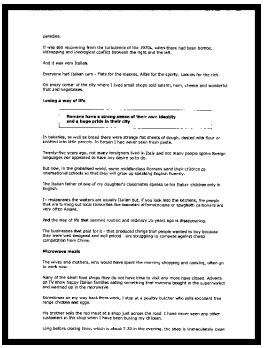
Check if you wish to remove the blank page and move the slider to the left or right to your desired threshold.

Edge Fill

Check White or Black if you wish to add white or black edge on the border of your scanned image. Enter the value from 0 to 5 mm. Default value is 0.



Original



Edge Fill: 5mm (Black)

Image Control Option

Check the Mirror box if you wish to reverse the right and left side of your image.

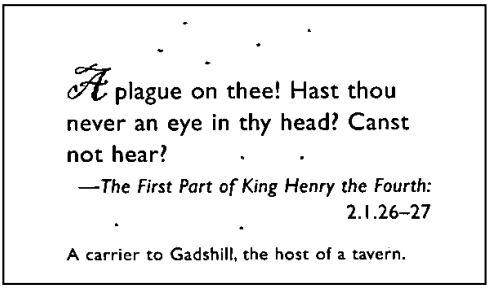
Original

The Mirror Effect

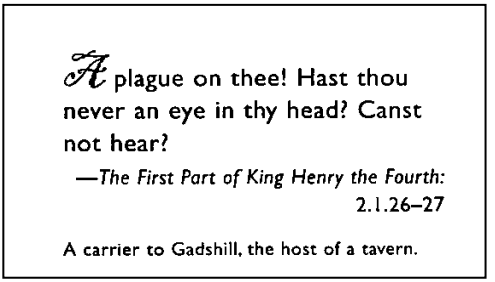
Despeckle

Occasionally small dots or specks appear in the background of a scanned image. Remove unwanted speckles provides a cleaner image for OCR (Optical Character Recognition) processing, and also helps to reduce compressed file size.

Define the speckles (also known as image noise) you wish to remove by specifying its number (size) and radius (range). The measuring unit is pixel. The higher the number, the more speckles will be removed.


A plague on thee! Hast thou never an eye in thy head? Canst not hear?
—The First Part of King Henry the Fourth: 2.1.26–27
A carrier to Gadshill, the host of a tavern.

Before Despeckle
(noise number:0, noise radius:1)

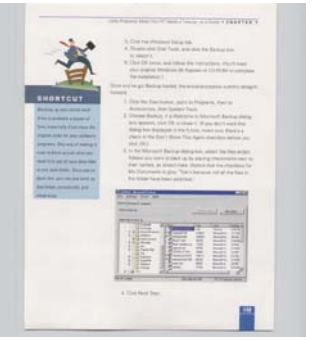

A plague on thee! Hast thou never an eye in thy head? Canst not hear?
—The First Part of King Henry the Fourth: 2.1.26–27
A carrier to Gadshill, the host of a tavern.

After Despeckle
(noise number:22, noise radius:10)

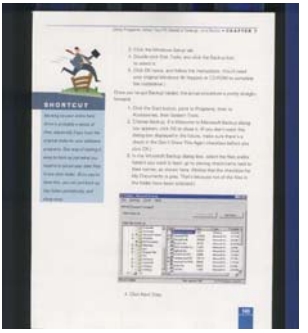
Note:

- The function is currently available for Black and White image only.
- To scan at rated speed, it is recommended to set the noise radius up to 10 pixels.

Background Setting	This option allows you to set your scan background. **Choice: White Background, Black Background.**



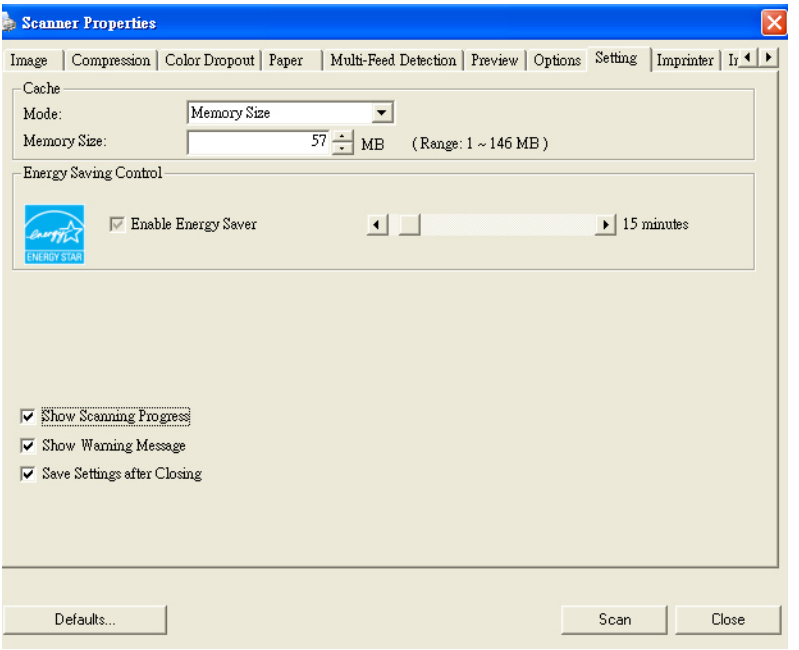
White Background



Black Background

4.9 The Setting Tab

The Setting tab allows you to set the following settings:



The Setting tab dialog box

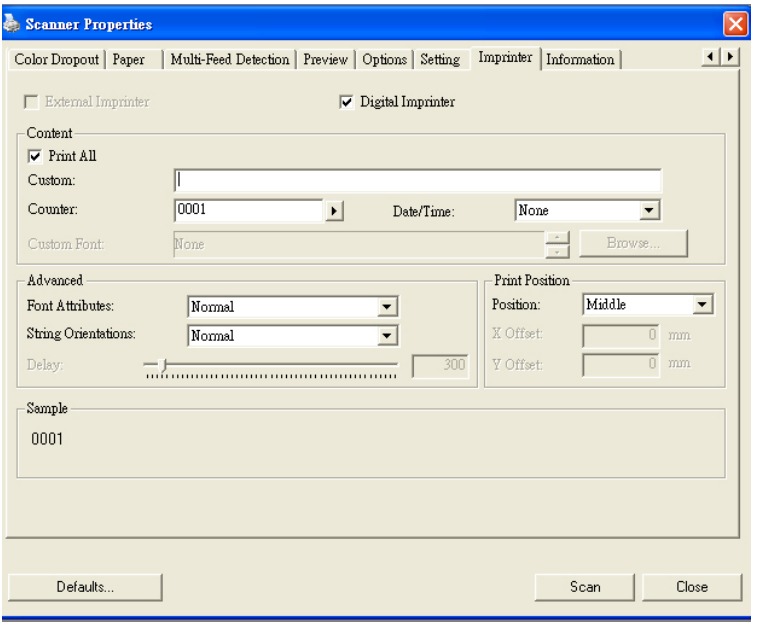
Energy Saving Control	Check the **Enable Energy Saver** box and move the slider to the right to set the amount of time to start the energy saver after your last action. The range is from 1 to 240 minutes. The default is 15 minutes.

Cache	**Mode: None, Page Number, Memory Size**. This option allows you to assign a specified memory size from the available RAM to process the image data. By specifying a smaller memory size, you can free more memory for other applications you are running. By specifying a larger memory size, you can have more memory to process the image data especially when you have a large amount of documents needed to be scanned. You can also specify your memory size by the page number. For your information, an A4 color document scanning at 300 dpi consumes approximates 24MB. **Image Count** When the selected cache mode is “none”, the image count option allows you to assign number of pages you need to scan. For example, if you wish to scan the first two pages, simply move the page slider to 2, and the scan action will be stopped when the scanning of the first two pages have been completed.
Barcode Detection	Check this option to enable detecting and recognizing barcode in your document. After the detecting process, an avbarcode.ini file will be generated and stored in your system drive, for example, Windows\avbarcode.ini. Note: The availability of this feature varies based on type of scanner.

Show Scanning Progress	Check and the scanning progress bar will be shown during scanning.
Show Warning Message	Check to show the warning messages such as “ADF pad count exceeds 50,000 scans (the number varies based on type of scanner). Please replace the ADF pad and reset the pad count.”
Save Settings after Closing	Check to save your scanner properties settings after leaving the dialog box. Next time when you open the Scanner Properties dialog box, the previously saved settings will be shown.

4.10 The Imprinter Tab

The Imprinter tab allows you to print alphanumeric characters, date, time, document count and custom message on your scanned image if digital imprinter is selected or at the back of your document if external imprinter is selected.



Choice: External Imprinter, Digital Imprinter. If you have installed an external imprinter, choose external imprinter. If you do not have an imprinter, choose digital imprinter. Note External Imprinter provides a vertical and rear-side print capability while digital printer provides a horizontal and front-side print capability.

Contents

Print All	Check **Print All** to automatically print the text at all pages of your documents. Uncheck **Print All** to print the text for the first page of your documents only.
Custom	Enter your custom text to be included in your print string.
Counter	Show the document count for the scan session. This value is increased sequentially by the scanner.

Date/Time	Choose if you wish to include the date and time in your print string. Format: YYYYMMDDHHSS For example, 20090402170645-check0001 indicates year, month, date, hour, seconds, your custom text and the counter.
Custom Font	Click the **Browse** button to insert your desired font. This option is available only if you have installed an external imprinter.

Advanced

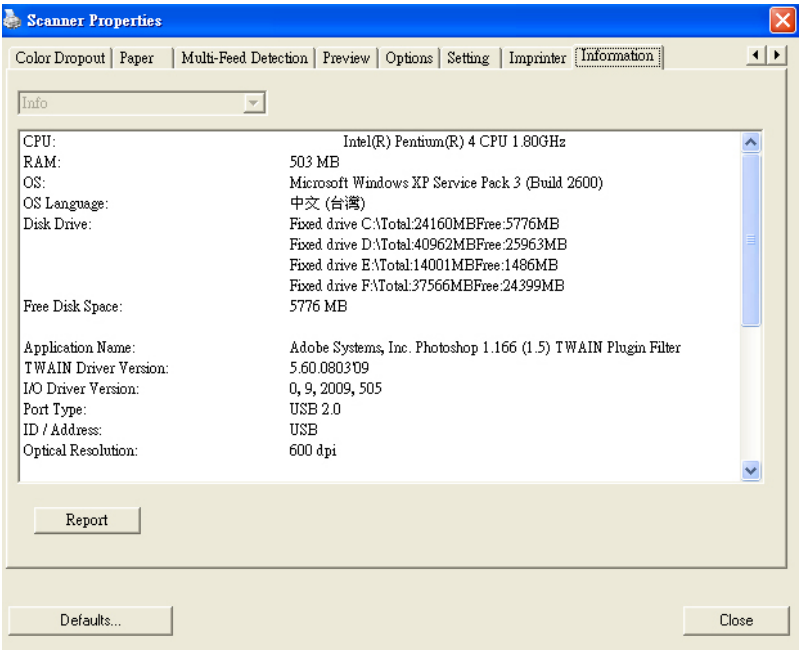
Font Attributes	Choose your font attributes. **Choice: Normal, Underline, Double, and Bold.**

String Orientation	**Choice: Normal, Rotated (180 degrees)**
Delay	Choose the position of the print string. Move the slider from 1 to 5000. Default: 300. This feature is available only if an external imprinter is installed.

Print Position
Choose the position of your printed string. **Choice: Top, Middle, Bottom, Custom.** If Custom is selected, enter the X and Y offset value to specify the position.

4.11 The Information Tab

The Information tab displays the following system and scanner information.



The Information tab dialog box

The "Report" button :

If you encounter any error message while using the scanner, click the Report button. A report.txt file (C:\AVxxx) will be generated. Please send this file to the nearest service center for trouble shooting.

The "Reset Pad Count" button :

After scanning approximately 50,000 pages (the number varies based on type of scanner) through the Auto Document Feeder (ADF), the ADF pad may be worn out and you may experience problems with document feeding. In this case, it is highly recommended to replace the ADF pad with a new one. (Please refer to the manual for proper replacing procedure.) For ordering the ADF pad, please consult your nearest dealer. After replacing the ADF pad, click the "**Reset Pad Count**" button to reset the pad count.

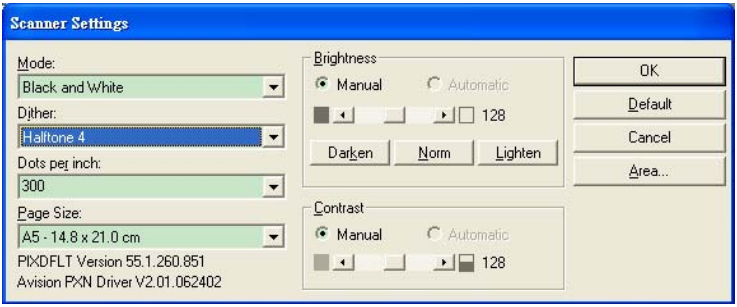
The "Reset Roller Count" button :

After scanning approximately 200,000 pages (the number varies based on type of scanner) through the ADF, the ADF roller may be worn out and you may experience problems with document feeding. In this case, it is highly recommended to replace the ADF roller with a new one. (Note the replacement of the ADF roller has to be performed only by authorized service center. Therefore, please return your scanner for roller replacement.) After replacing the ADF roller, click the "**Reset Roller Count**" button to reset the roller count.

Note :
The lifetime and the replacing procedure vary based on type of scanner. Please consult your nearest dealer for more details.

5. The ISIS Interface Operation

The ISIS driver operation method is similar to the TWAIN's functions on the ISIS interface screen is briefly described as below:



Mode: Select one of scan modes, including B&W, gray, color options.

Dither: 5 halftone levels available, can be disabled.

Dots per inch: Select your desired resolution.

Paper Size: Select your desired paper size.

Brightness: Adjust your scan image brightness or darkness.

Contrast: Adjust the range between the darkest and the lightest shades in the image.

Default: Click to reset all settings.

Area: Select your desired scan area or position.

6. Using the Buttons

To use the buttons on the scanner, you need to install the Button Manager. To ensure the Button Manager work properly, please FIRST install Button Manager before installing the scanner driver.

6.1 Installing Button Manager

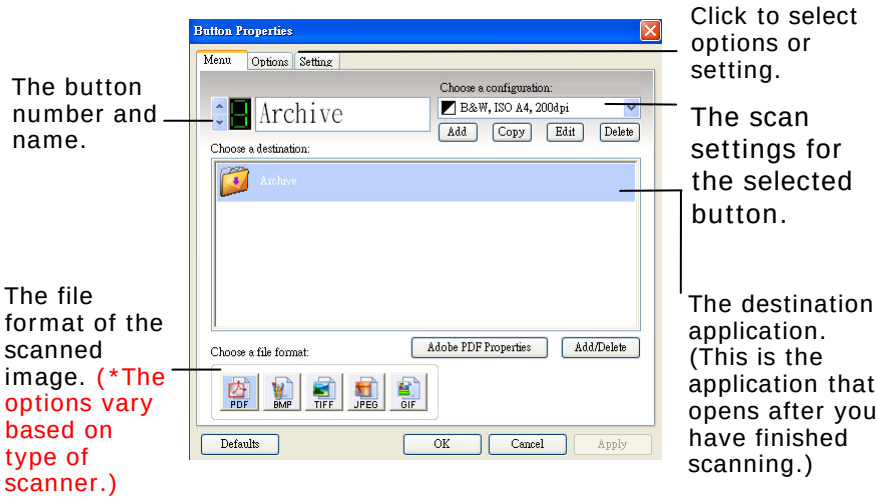
Installing the Button Manager is easy. Insert the supplied CD to your CD-ROM drive and follow the instructions on the screen to complete the installation of the Button Manager.

Button Manager provides you an easy way to scan your document and then link the scanned image to your designated software application. All this can be done by a simple touch of the button on the scanner. Yet, before you scan, it is recommended to check the button configurations first to ensure a proper file format and a destination application.

6.2 Checking Button Configurations Before Scanning

1. Click the Scan button on the scanner.
2. The Button Panel is displayed in the Windows System Tray at the bottom right corner of your computer screen. The default button destination is indicated in highlighted color.

3. The Button Panel shows the first five scanning buttons. Right-click the button (function) you wish to check. The Button Properties window appears.

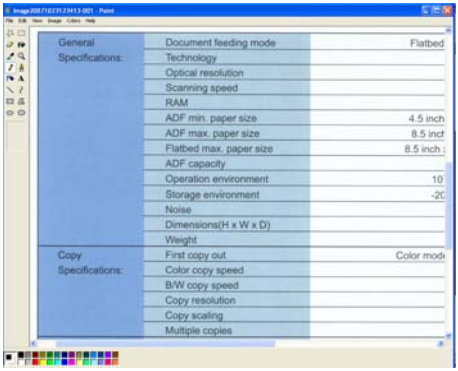


The default setting is indicated in highlighted color. If you wish to change the setting, use this window to reset the setting for the file format, destination application, or other scan settings. See “Configuring the Button” in the subsequent section to reset the settings.

4. Click the OK button to leave the window.

6.3 Scanning From One Touch of the Button

1. Insert document to the scanner.
2. Choose the button on the Button Panel to send the scanned image to your specified destination. The selected button will be highlighted. (For example, if you want to scan with button #4, which open Microsoft Paint and display the scanned image in the main window of Microsoft Paint, button #4 on the screen will be highlighted.)
3. Press the Scan button on scanner.
4. After the scanning is finished, the Microsoft Paint software will be launched and the scanned image appears in the main window of Microsoft Paint as below.



Note:
To accurately use the default settings, you need to install the necessary software application such as E-mail software or Adobe Reader before installing the Button Manager. Or you may install these applications and add these applications to the Button Manager. For details information on how to use the Button Manager, please refer to the user's manual in the supplied CD.

7. Care and Maintenance

7.1 Cleaning the Scanner Glass

Use the included cleaning cloth to clean the rollers and the scanner glass on the following conditions:

- As a guideline, clean the rollers after every 5,000 scans. Note that this guideline might vary based on the type of documents you are scanning.
- The scanned images have streaks or scratches.
- You experience repeated document jams.

To clean the roller and the scanner glass, follow these steps:

1. Open the sealed roller cleaning cloth container, starting at the notch. Take care not to tear the cleaning cloth.
2. Remove the cleaning cloth and unfold it.
3. Place the unfolded cloth into the paper feed slot.
4. Press the Scan button to feed the cloth through the scanner.

Caution:
Wait two minutes for the components to dry before proceeding to the next step.

5. Place one sheet of paper in the scanner. Scan and view the results.

6. If streaks still appear, repeat steps 3 through 5. The cleaning cloth can be cycled through the scanner up to five times within 30 minutes. After that, the cloth will dry out.

8. Troubleshooting

8.1 Clearing a Paper Jam

In the event of a paper jam, follow the procedures below to remove the paper:

To clear a paper jam:

1. Gently pull the paper from the scanner.
2. Smooth out any wrinkles caused by the jam.
3. Reinsert the paper to the paper feed slot.
4. Resume scanning.

8.2 Frequently Asked Questions

Question: The scanned image always comes out to be too dark.

Answer: 1) Use your application to modify the Gamma setting to 2.2 and 1.8 for your printer and monitor respectively.
2) Adjust Brightness setting from the TWAIN interface to get a brighter image.

Question: The scanner works well except for the line art, the lines of which seem much thicker than the original.

Answer: Increase the Brightness or adjust the Threshold setting to adjust the line art image.

Question: Feeding paper from the ADF easily causes paper jam.

Answer: Make sure to close the front paper tray. While the front paper tray is open, feeding paper from the automatic document feeder easily causes paper jam.

8.3 Technical Service

Before contact Avision, please prepare the following information:

- Scanner serial & revision number (located on the bottom of the scanner);
- Hardware configuration (e.g., your host CPU type, RAM size, free disk space, display card, interface card);
- The name and version of your scanning software application;
- The version of your scanner driver.

Please call us at:

Headquarter
Avision Inc.
No. 20, Creation Road I, Science-Based Industrial Park,
Hsinchu 300, Taiwan, ROC
TEL: +886 (3) 578-2388
FAX: +886 (3) 577-7017
E-MAIL: service@avision.com.tw
Web Site: http://www.avision.com.tw

9. Specifications

All specifications are subject to change without notice.

Model Number	FL-0914S
Scanner Type	Duplex scanner
Light source	LED
Technology	CIS (Contact Image Sensor)
Optical Resolution	600 x 600 dpi
Maximum Scanning Size	8.5”x14”
Minimum Scanning Size	2.9”x2.1”
Paper Weight	13.3~32 lbs (50 ~ 120 g/m^2)
ID Cards Thickness:	Up to 1.25 mm (0.05 inch)
Interface	High Speed USB 2.0
Power	5Vdc, 500mA
Power Consumption	< 2.5 watts (operation)
Operation Temperature	10~35°C
Dimension (WxDxH)	290 x 75 x 52mm (11.4 x 3x2 inch)
Weight	0.674 kg (1.5 lbs)

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